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LITHOTRITY BY A SINGLE OPERATION.[1]

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LITHOTRITE. (Figure 7.) — It would be plainly desirable, if it were easy, to crush the whole stone at once before attempting to evacuate it, but this has hitherto been rarely possible. The lithotrite becomes so choked with impacted débris that the convex surface of the mass less readily receives additional fragments. A clean lithotrite always works to best advantage; and the operator frequently withdraws the loaded instrument, sometimes with injury to the neck of the bladder, to evacuate it. It would be obviously better if the instrument could be emptied at will in the bladder, especially if we distinctly recognize that what can be withdrawn in a lithotrite would come better through a tube, and that the province of the lithotrite should be to pulverize, or indeed merely to comminute, and not to evacuate.

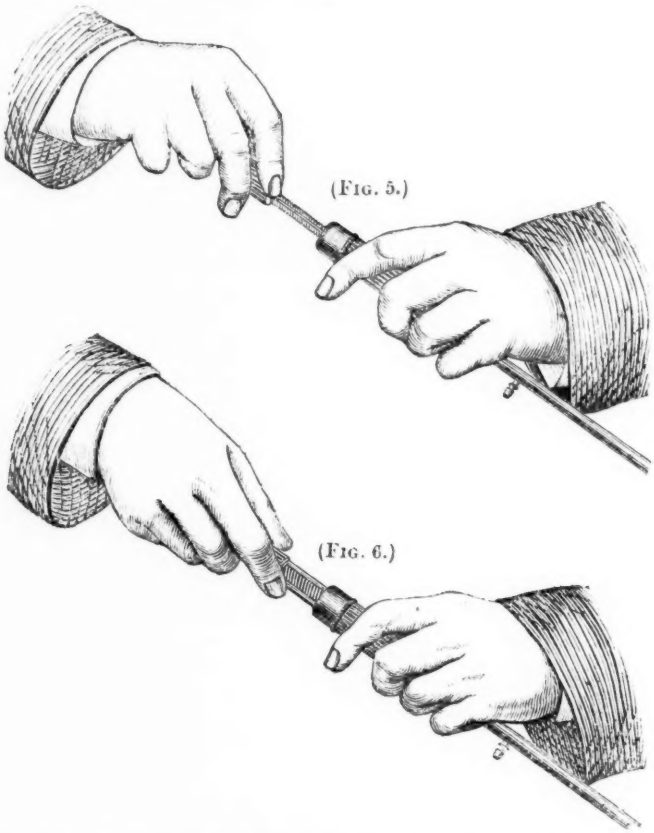
Although all lithotrites are made a little loose for the purpose of working out the débris, and although I have had one constructed with an especial device for this motion, I do not find it easy to clear the concave blade by a lateral movement of the male blade, chiefly because the impaction is so firm that the dense mass, instead of yielding, twists the female blade from side to side. Nor does an instrument like that of Reliquet fulfill the indications. It discharges itself, indeed, as does the old fenestrated "lithoclast." But, as in all lithoclasts, its high sides are an obstacle to the approach of fragments. The male blade also of Reliquet's instrument is that of the lithoclast, and we need only close the blades between the thumb and finger to be satisfied of their scissor-like action upon the bladder.

The instrument about to be described keeps its blades clear and secures certain other desirable ends relating to the injection of water, the lock, handle, etc.

Lock. The general acceptance of the cylindrical handle of Thompson's instrument testifies to its convenience as a hold for the left hand. But it is always a little awkward to disengage the thumb of this hand,

[1] Concluded from page 271.

or in fact of either hand, in order to close the lock of a lithotrite at the critical moment of grasping the stone. This objection I have obviated in closing the lock by rotation of the right wrist without displacement of the fingers of either hand. (Figures 5 and 6.)



(Figs. 5 and 6.) Position of the hands in holding and locking the lithotrite. Figure 5. Lithotrite unlocked. Figure 6. Lithotrite locked by a quarter rotation of the right wrist.

Wheel. In a protracted sitting the wheel is an inconvenient handle, its chief merit being that it affords so insecure a grasp that the operator is supposed to be unable, with its prescribed radius, to break the blades. But in a larger instrument these blades are stronger, and a ball may be substituted for the wheel. (Figure 7 a.)

Injecting tube. If the sitting be protracted, as proposed, the water dribbles away, and the collapsing bladder, especially if trabeculated, is liable to serious damage from the lithotrite. To meet this difficulty, my lithotrite contains a tube or groove between the blades for the injection of water without removal. (Figure 7, d.) I formerly injected water by means of a short flat tube inserted into the urethra from time to time by the side of the lithotrite.

Blades. The blades of this lithotrite consist of a shoe, or female blade, the sides of which are so low that a fragment readily falls or slides upon it; while the male blade, or stamp, offers a series of alternate triangular notches by whose inclined planes the detritus escapes laterally, after being crushed against the floor and rim of the shoe. At the heel of the shoe, where most of the stone is usually comminuted, and where the impact is therefore greatest, the floor is high and discharges itself laterally, while its customary slot (Figure 8 f) is made to work effectively. It may be unnecessary to say that the female blade of the common lithotrite, when drawn from a thin flat plate, as in the French instrument, has a disadvantageous cavity at the heel, where the greatest impaction occurs by gravitation.

(Fig. 7.)

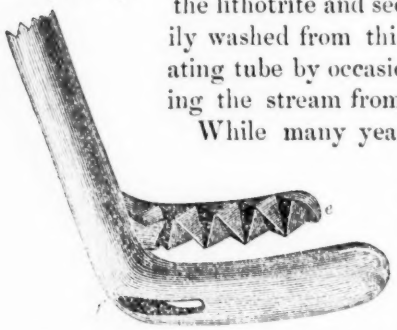
One of the dangers of lithotrity, which has been already emphasized, is the liability of the bladder to be nipped in the instrument. In view of the character of many of the instruments sold, we might expect to hear more of this accident, although indeed it is a quiet one. It cannot be too carefully provided against, not only by skill in the operator, but also in the construction of the instrument itself, and especially during a protracted operation, while water is escaping and the bladder collapsing. With this object, the shoe is here wider and longer than is usual, to repel the vesical walls. (Figure 8 f.)

It can hardly be doubted that in practice dexterous operators secure most stones and fragments as they gravitate into the female blade while it depresses the floor of the bladder, perhaps a little to one side or the other, where the stone is felt. A similar and efficient manœuvre, especially for a small fragment, is that of opening the blades of the lithotrite widely in the vertical position, then slowly turning them to one side and closing them along the floor of the bladder. If, in attempting this, the instrument be opened after it is turned, the male blade displaces the fragment without securing it; and it is of course understood that in opening the lithotrite the blade in contact with the bladder, commonly the female blade, is stationary. The inverted lithotrite works efficiently in a depression if the bladder be kept out of harm's way by a special device; but with the common

(Fig. 7.) Lithotrite by Collin & Cie., from a working model. *a*. Ball which turns the screw. *b*. Revolving cylinder-handle attached to the screw-guard, which also revolves. This guard consists of two square or T-shaped rods. They slide through notches in the cap of the lock. By their revolution the cylinder-handle turns the cap and operates upon the lock. *c*. Cap of the lock, which by its revolution wedges up the screws. *d*. Injecting pipe communicating with the blades.

lithotrite it is important to turn the blades up before crushing, and move them, in order to be sure they are free. In the exceptional case of a stone behind the prostate, it may be necessary to invert the lithotrite and seek it. Fragments, however, are readily washed from this region within reach of the evacuating tube by occasionally turning the orifice and directing the stream from the tube upon them.

(Fig. 8.)



(Fig. 8.) *e.* Male blade, presenting, on alternate sides, triangular notches. The small portion of débris not discharged laterally by these notches is driven through the slot in the female blade. *f.* Slot in the female blade.

While many years ago I had not unfrequently prolonged lithotrity to ten or fifteen minutes, and longer, it is only within two years that I have aimed at the evacuation of a considerable stone during a single sitting; and although long experience will perhaps be necessary to determine precisely what cases are unfavorable to such an operation, there can now be no question that it is practicable to remove at once a far greater quantity of débris than has hitherto been considered possible. The conditions most favorable to lithotrity are obviously most favorable to this modification of it, — a stone neither very large nor hard, and especially a large urethra, promising its best results. But if the preceding views are correct the future of lithotrity lies in the direction of a fast-working lithotrite, which, while it effectually protects the bladder, is more powerful than the usual instrument, and better proportioned to the work it is to do, — a rapid comminution of the stone, — its immediate and complete evacuation by means of a large tube with an efficient orifice, while the fragments are at will scattered or gathered, for aspiration, — and the ready recognition and removal of any obstruction which delays the process. It will be no longer essential to pulverize the stone, but only to comminute it; and if, in so doing, the lithotrite can be kept free from impaction, the process will be more rapid and efficient.

During the last year I removed by lithotomy two soft stones, weighing 1272 and 1230 grains, from two male adults aged forty and twenty-four years respectively, who recovered after various risks. I now cannot but think that with a tolerably sound bladder, a urethra of good size, a large lithotrite, and a large tube, the operation could have been performed with less risk by lithotrity.

We get a useful view of the interior of the bladder by examining it in position through an opening in its summit. This part of the organ, with the free and thin posterior wall, is mainly concerned in distention. The floor of the bladder is comparatively firm and flat, and, if the sub-

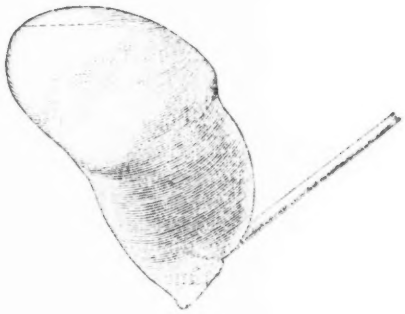
ject be in good condition, adheres to a thick mass of cellular tissue in and near the ischio-rectal fossæ, upon which it rests. This mass is traversed by the rectum variously distended; and this canal, in a thin subject, may be advantageously filled with air during an operation, to facilitate its indentation by an instrument, — reversing, for the operation of lithotrity, one of the precepts of lithotomy.

The sigmoid flexure is largely concerned in compressing the bladder behind. The posterior wall of this viscus may be so crowded by the intestines that it becomes flat, or even concave. A horizontal section of the bladder is then transversely oval, flattened between the intestines behind and the pubes in front, each of these indenting it. A well-filled or tense abdomen tends so to shorten the antero-posterior diameter of the bladder that, while a large stone may gravitate backward into that part of the bladder which is compressed by the intestines, carrying the thin wall with it, it is not so with a small fragment, which, unless the floor be artificially depressed, may lie on one side or the other of the vesical orifice more readily than at a considerable distance behind it. So, in sounding with a curved sound, it may sometimes be a little difficult to move the instrument back and forth in the urethra when its extremity may be readily turned down upon the floor of the bladder on either side. It is seen also (see Figures 9 to 13), as a result of this conformation, that a lithotrite or straight tube, standing at an angle of forty-five degrees with the recumbent body, abruptly buries its extremity in the floor of the bladder near the foot of the posterior wall, which then becomes more upright, and does not lie upon the centre of an extended concave surface, as is sometimes represented. The deep pit at the extremity of the straight tube, and the similar depression made further forward by the curved and inverted tube (see Figures 9 and 10) show how readily fragments can be made to gravitate to the lithotrite, or to the tube orifice, provided the latter be not plugged by the mucous membrane. The curved tube, when inverted, rests on the adherent floor; but the straight tube, bearing upon the free and thin posterior wall (Figure 10), should not be urged too forcibly against it. In either case the nearer the instrument approaches a vertical position the deeper will be the indentation. A pit of this sort, formed in the elastic floor by an almost insensible pressure of the instrument, explains the observation of Thompson, that when a fragment is caught by the lithotrite many more are likely to be caught, like fish, in the same place. A central indentation of the floor also explains how, in certain cases of large stone, a lithotrite or sound may be passed back and forth beneath it without touching it, unless the beak is tilted up. The stone may then seem to adhere to the upper wall of the bladder, and to be suspended from it.

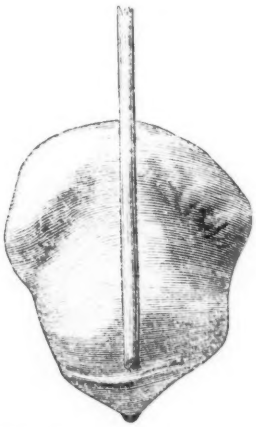
Note. — The lithotrite and the evacuating apparatus are manufactured by Tiemann & Co., New York.

(Figs. 9 to 13.) Plaster casts of bladders variously distended, and holding instruments, to show the effect of a slight pressure in indenting the floor of the bladder, in order to facilitate the approach of fragments. The dotted line near the summit of each represents the level of an air cavity, which makes it possible to place the cast in the exact position it occupied in the horizontal subject.

(Fig. 9.)

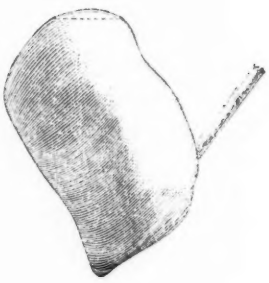


(Fig. 9*a*.)

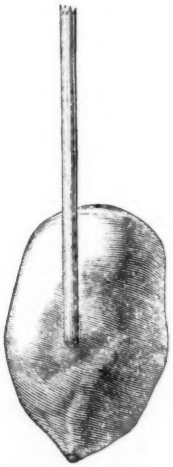


(Figs. 9 and 9*a*.) Side and front view of a distended bladder of singular symmetry. The original suggests the torso of a Silenus, the pectoral pouches overhanging the pubes; the abdomen beneath the symphysis; while the hollow loins were cushioned on the sigmoid flexure which indented them. The extremity of a curved tube is seen below, at the apex of an inverted tunnel, and just above it a trace of the vesical valve.

(Fig. 10.)

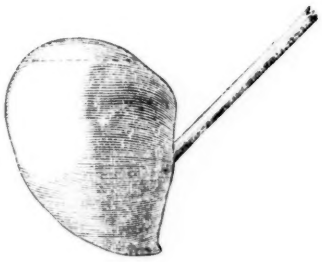


(Fig. 10*a*.)

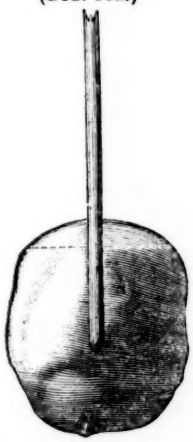


(Figs. 10 and 10*a*.) A less distended bladder containing a straight tube which indents the posterior wall.

(Fig. 11.)

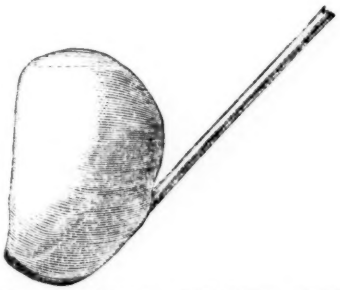


(Fig. 11*a*.)



(Figs. 11 and 11*a*.) A bladder with a curved tube brought forward behind the prostate, slightly indenting the floor.

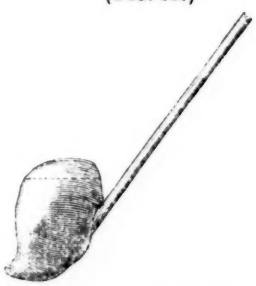
(Fig. 12.)



(Fig. 12*a*.)

(Figs. 12 and 12*a*.) A bladder containing a large lithotrite, which has so depressed the floor that the posterior wall rises perpendicularly.

(Fig. 13.)



(Fig. 13*a*.)

(Figs. 13 and 13*a*.) A bladder with a very small injection, imprisoning a lithotrite.

CASES.

CASE I. December 14, 1875. Age, sixty-four. Date of symptoms, six years. Two or three stones, measuring from half an inch to more than three quarters. Three sittings. First sitting: no fragments were removed through a tube. Second sitting: interval, seven days; duration, forty-five minutes, under ether; quantity removed, "a large mass of fragments;" size of tube, twenty-seven. Third sitting: interval, twelve days; quantity removed, "a few fragments." Result: the patient was discharged, well, one week after.

CASE II. May 15, 1876. Age, sixty. Date of symptoms, twenty years. Two stones, of one and a quarter inches and three quarters of an inch diameter, respectively. One sitting: duration, one hour and a half, under ether; lithotrite introduced three times; quantity removed, one hundred and sixty-seven grains; size of tube, twenty-nine; there was afterwards a slight cystitis; no fragments were passed; in two weeks the patient was again sounded, and no fragments were found. Result: discharged, well.

CASE III. August 6, 1876. Age, sixty-two. Date of symptoms, eighteen months. Several stones, none larger than three quarters of an inch. The patient was confined to the house, in great pain, drawing his water every half hour or less. The prostate was unusually large. One sitting: duration, about one hour and three quarters, under ether; size of tube, twenty-nine. He afterwards passed a few grains of sand only. Result: no unfavorable symptoms; almost entire relief from pain. Later, no difficulty in retaining water, but continues to pass catheter; gained flesh and former health, and resumed avocation.

CASE IV. December 14, 1876. Age, sixty-six. Date of symptoms, two years. Single stone. One sitting: duration, about an hour, under ether; quantity removed, one hundred and eleven grains; size of tube, twenty-eight. Result: the patient did well for two days; then there was a chill, with higher temperature; pain in the back, and pain referred to the left hip; a gradually failing pulse; moderate meteorism, with but little tenderness; death on the sixth day. An autopsy was not permitted.

CASE V. January 8, 1877. Age, fifty-five. Date of symptoms, one year. Single stone. "A severe chill followed the primary examination." Seven days after, the meatus was incised and enlarged from 28 to 31 Charrière. One sitting: diameter of stone, ten to twenty millimetres; duration, one hour, under ether; size of tube, thirty-one. Result: no sand nor fragments were afterwards passed; nor were there any subsequent symptoms.

CASE VI. April 21, 1877. Age, forty-three. Single stone with bone. Five years ago the pelvis of this patient was crushed. Sinuses, discharging dead bone, opened on both hips. Six months after the injury, symptoms of stone existed. One sitting: duration, one hour and a half, under ether; meatus incised; size of tube, thirty; quantity removed, sixty-six grains, and also three small pieces of bone, doubtless nuclei, one of which was incrusted. An indurated spot was detected by the tube, where the bladder seemed to adhere to the pelvis. Four days after, under ether, the lithotrite brought away with difficulty, through the urethra, a square scale of bone too elastic to be broken, measuring five eighths of an inch by seven sixteenths, but neither sand nor

fragments. Result: there were no unpleasant symptoms at any time; and after another careful examination for bone the patient was discharged, well.

Case VII. (Dr. T. B. Curtis's case.) March 6, 1877. Age, fifty-four. Date of symptoms, two years. Single stone. One sitting: diameter of stone, one inch and a quarter; duration, one hour and twenty-five minutes, under ether; lithotrite introduced three times; size of tube, thirty-one; quantity removed, when dry, two hundred and fifty-seven grains; the six largest fragments weighed together twenty-four grains; the strained urine yielded during the next week two and one-half grains. Result: rapid recovery, with no subsequent symptoms.

Case VIII. (Dr. C. B. Porter's case.) August 19, 1877. Age, sixty-one. A large, flabby man, with a feeble pulse. Date of symptoms, twenty-six years. Two stones, one of which is so large that it is barely possible to lock the lithotrite. Passes water every fifteen or twenty minutes. Three sittings. First sitting: duration, one hour and a half, under ether; size of tube, twenty-eight; quantity removed, two hundred and twenty-eight grains; passed afterwards one hundred and eight grains. Second sitting: interval, four days; duration, three hours, under ether; size of tube, thirty; quantity removed, seven hundred and forty-four grains; passed afterwards sixteen grains. No after symptoms of importance. Third sitting: interval, five days; duration, three and three quarters hours, under ether; size of tube, thirty-one; quantity removed, seven hundred and six grains; no pain nor discomfort afterwards; total number of grains, after drying, one thousand eight hundred and two. Result: discharged, well, two weeks from the date of the first operation. After a few weeks the patient could retain his water from three to four hours.

Remarks. — The details of the earlier of these operations are expressed with less exactness than I might now desire, but were dictated by myself at the time, and are within the fact, as to the duration of each operation, and the size of the stones. The cases, all of soft stones, *i. e.*, not oxalate of lime, are the only ones by which the method which is the subject of this paper has been tested. As statistics they are not so numerous as to have importance. But they abundantly illustrate what this operation is able to accomplish in removing at once a large quantity of stone by the urethra. The fatal case, without an autopsy, the absence of which is greatly to be regretted, must pass for what it is worth. The other cases demonstrate a tolerance by the bladder of protracted manipulation which has not hitherto been recognized.

LECTURES.

THE SYMPTOMS AND TREATMENT OF POST-PARTUM HÆMORRHAGE.[1]

BY R. A. F. PENROSE, M. D.,
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THE great accident of the third stage of labor is post-partum hæmorrhage. This accident differs from the others which we have just been studying in that it gives the attending physician no time to send for advice, in that it comes on suddenly, pursues a rapid course, and, unless speedily checked, has an invariably fatal termination. Unless the physician, therefore, be well armed and thoroughly able to treat this condition promptly the patient will quickly slip from his grasp. After a healthy labor the uterus rapidly contracts and becomes exceedingly small. Nature ligates all the torn vessels with living fibres; then, and not until then, is the woman safe.

The great cause of post-partum hæmorrhage is uterine inertia. To go more into particulars, however, the causes of this accident may be divided in general into two, — the *predisposing* and the *exciting* causes.

Under the first head we may have any one or more of three conditions: (1) plethora, (2) anæmia, and (3) habit, that is, the occurrence of hæmorrhages at former labors. Among the exciting causes may be mentioned: (1.) The exhaustion consequent upon a prolonged labor. The woman's general and local nervous system has been worn out, and there is not enough nerve force left in the womb to produce proper contraction. (2.) Too rapid a labor. The very worst cases are likely to happen where the labor has been too rapid, for in such instances as these the cavity of the womb is emptied in so short a time that the muscular fibres are left stupefied, benumbed, and without any ability to contract. (3.) Excessive distention of the uterus by liquor amnii or by twins. The rationale of this cause is very evident.

When any of these predisposing or exciting causes act singly no hæmorrhage is likely to take place; but where there exists both a predisposing and an exciting cause hæmorrhage is exceedingly liable to occur, unless the proper steps be taken in season to prevent it.

Post-partum hæmorrhage may come on immediately after the birth of the child, or it may be delayed in its appearance for several hours, days, or even weeks.

What is the prognosis? In general, and particularly among skillful practitioners, hæmorrhage very rarely happens, and when it does is speedily cured.

The symptoms of the hæmorrhage may be divided into constitutional

[1] Reported for The Boston Medical and Surgical Journal.

and local. Among constitutional symptoms may be enumerated feeble pulse, dimness of vision, syncope, ghastly pallor, and one special sign which I think is almost pathognomonic, namely, ***dreadful gaping***. When you see this in a woman who has just been delivered, together with pallor and syncope, you may be sure that something serious is the matter. The local signs may be divided into external and internal. The external signs are the gush of blood from the vagina; the internal, the existence of an inert and flabby uterus, as shown by abdominal palpation and manual examination. I would particularly call your attention to the fact that the hæmorrhage may be entirely concealed by various chances, such as the too close application of a napkin to the vulva or a placenta plugging up the mouth of the uterus. In such a case the only means of diagnosis you will have will be the constitutional symptoms and the enlarged and flabby uterus.

The management of post-partum hæmorrhage resolves itself into preventive and curative treatment. Let us see how nature prevents its occurrence. First, by all the causes which irritate the inner surface of the uterus, os uteri, and vagina, such as the presence of the child and of the placenta, the introduction of the hand of the accoucheur, etc., etc. Then there is the pressure exerted by the abdominal muscles and by the hand of the medical man; the reflex stimulus to contraction set up by the application of the child to the breast, by the sensation of the rush of milk to the breast, by the sympathy existing between the womb and the stomach, as excited by the internal administration of a glass of ice-water or lumps of ice.

What are the means by which the physician is enabled to prevent the occurrence of hæmorrhage? He must bear in mind the predisposing and exciting causes. If the woman is plethoric and has bled profusely at former labors, saline purgatives and diuretics should be employed, and she should be kept upon a low diet for some time previous to confinement. If there is marked anæmia, advise the liberal use of iron, bitters, stimulus, and plenty of good, nourishing food. Try, too, to obviate any of the exciting causes that may be present. If the labor prove long and tedious, hasten it by the careful and skillful use of the forceps. If, on the other hand, the labor be too rapid and the uterus is emptying itself too soon, try to make the labor slower by anæsthetics and all the means in your power. As soon as the body of the child is expelled do your best to secure immediate contraction. To this end ergot must be freely given, and all the external means of causing contraction brought to bear upon the case.

So much for the preventive treatment. What is the nature of the curative treatment? In every case the first indication is to see at once that the placenta be removed. If it be only partially separated from its attachments very grave hæmorrhage may ensue. If the bleed-

ing persists after the placenta has been expelled, you must administer large doses of ergot, — as much as one fluid drachm of the fluid extract every fifteen minutes. Where the stomach will not bear the ergot in such quantities give it hypodermically. Then you should at once apply extra-uterine stimuli; place one hand in the cavity of the uterus, and with the other make firm pressure over the abdomen. You thus employ a double stimulus to contraction.

The above measures generally suffice to cause prompt contraction. But suppose the uterus does not respond. Now what are you to do? Make a cold application. Cold acts in two ways: it promotes uterine contraction (1) by depressing the circulation, and (2) by its reflex action upon the nerve centres. If your cold towels do not act at once they will not act at all, so do not keep them upon the abdomen for more than five minutes. A better way, perhaps, of applying cold than by the wet cloths is to take a piece of ice the size of a walnut, and carry it right up into the cavity of the womb. At the same time you may keep up external pressure with your other hand upon the abdomen, or you may use ice externally. In some cases it may be well to inject cold water into the vagina and rectum. Dr. Marshall Hall advises pouring a stream of cold water from a considerable height upon the abdomen. The shock of such a procedure would of course be likely to bring on contraction, but I object to such rough measures. There is great danger of serious sickness arising from the exposure of the woman and her contact with the wet bed and wet garments.

Suppose, however, that the patient still bleeds in spite of you. The womb is so benumbed and paralyzed that it obstinately refuses to respond. Have you reached the end of your rope, and must you now give up the case as hopeless? Not by any means. At this juncture some obstetricians are in the habit of advising the use of alcohol, turpentine, and the per-salts of iron. All very good, but there is no need for such ferocious remedies as yet. They are far too likely to be followed by serious endometritis. I have no doubt that if on the same principle you placed an ivory speculum in the vagina and inserted through it the tip end of a red-hot poker into the relaxed womb, — I have no doubt, I say, that the immediate results would be most admirable. The womb would contract, of course, but you would kill your patient.

There is a very powerful and much less dangerous remedy than all the above-mentioned agents to be found in the shape of vinegar. Call for a teacupful of vinegar, dip your handkerchief or a bit of rag into it, carry it up into the uterus, and squeeze it out there. This remedy has never yet failed me. Where, perchance, there is no vinegar to be had, get a lemon, pare off the rind, make a number of deep gashes in it, carry it up into the inert womb, and squeeze it.

Still the bleeding goes on. Now I am going to imagine the worst

possible case, in which all previously suggested remedies have utterly failed. What now? If you wish you may try the per-salt of iron, but remember I do not advise it. Why not tampon the vagina? you will say. Let us cram the vagina full of pieces of rag. Not a drop of blood escapes. Do not be too sanguine. You have only converted the open into a concealed hæmorrhage, — a much more dangerous condition. Do not by any means use a tampon, therefore, but institute compression of the large vessels at the posterior part of the abdominal cavity — the ascending vena cava and the descending aorta; thus you will prevent both the accession and regurgitation of blood. Pressure upon the aorta also tends to keep the blood in the medulla oblongata. You may give with benefit at this time a good dose of opium, fifty drops of laudanum by the mouth, or from one eighth to one fourth of a grain of morphia hypodermically. Opium acts as a nervine and cerebral tonic, invigorating the nerve centres which preside over uterine contraction. In giving opium by the mouth select laudanum as the most stimulating preparation of the drug.

One of my medical friends tells me that he has had most excellent results in bad cases from the administration of a lump of sugar soaked in oil of turpentine. This, of course, acts as an arterial stimulant. Another friend has worked wonders by the use of a hot infusion (two drachms to half a pint) of capsicum, giving from one to two tablespoonfuls every fifteen or twenty minutes. In some desperate cases the galvanic battery may do good, passing the current from the lumbar and sacral nerve centres to the fundus and mouth of the uterus. Where everything else has failed, the transfusion of blood may be tried. Transfusion, however, is indicated rather where the hæmorrhage has been checked and the patient is bloodless and exhausted.

When the hæmorrhage is once checked, place your patient on the following treatment: Give ergot freely. Apply a tight binder over the lower part of the abdomen, — this lessens the flow of blood through the parts. Place a napkin just below the vulva to give notice of the least return of the bleeding. Have the patient's head low down on the bed by removing pillow and bolster. If there be a marked disposition to faintness elevate the feet. The patient, during convalescence, will need nervous and arterial stimulants, and good, nourishing food. To stimulate the circulation you may order either laudanum in doses of fifty drops once or twice daily, or morphia hypodermically. Alcohol may also be given either in water or milk. The nerves must be toned up by Hoffmann's anodyne and sweet spirits of nitre. Then the woman wants strong food, and after great hæmorrhage the proper food to give is saline food; animal broths with plenty of salt. In addition to this milk should be administered freely. The rest of the treatment consists in watching the patient carefully and keeping her quiet. A woman

may be anæmic for a long time after great loss of blood. In such cases tonics are demanded: the pyrophosphate, the sulphate, and the perchloride of iron, the syrup of the hypophosphites, small doses of arsenic and strychnia, with plenty of fresh air and sunlight.

Post-partum hæmorrhage may be due to other causes, such as laceration of the perinæum, vagina, or cervix uteri. One of my friends told me of a very interesting case following laceration of the perinæum, in which a large branch of the perineal artery had been ruptured. Of course the proper preventive treatment there would have been to have watched carefully the distended structure, and so to have prevented the accident. When the laceration has occurred the only thing, of course, is to ligate the artery at once.

The presence of a uterine polypus or tumor very often causes hæmorrhage. In these cases we may have to resort to the use of the persalt of iron to stop the bleeding. I have, however, been very successful with ergot.

I once saw hæmorrhage caused by an enormously distended bladder from which I drew off two quarts of urine. Of course the hæmorrhage at once ceased, and the uterus contracted. Last year I had a case caused by too rough handling of the patient by the nurse, causing sudden congestion of the uterus. I treated this case by opium, vinegar to the congested womb, and leeches over the lower part of the abdomen.

Again, only a short time since, I was called to a case occurring fully six weeks after the birth of the child. I searched very carefully, and could discover no cause for the bleeding. Upon close questioning the woman said that her husband had had connection with her that morning. Here the irritation of the act of copulation had brought on sudden congestion of the womb. I gave opium and ergot, and applied alum water to the vagina.

THREE CASES IN PRIVATE PRACTICE.

BY C. B. NICHOLS, M. D.

Rupture of the Heart. — E. J., aged seventy-four, a farmer, who had always been a healthy, hard-working man, was plowing, and in lifting the plow around at the end of the furrow felt a sudden sharp pain over the region of the heart, from which he became faint. He gave up his work and walked to his home, a short distance. The next day, the pain not having disappeared, I was called, and found the patient in bed, lying upon his back, breathing easily, pulse irregular and intermittent, ranging from 70 to 80 per minute, tongue clean, bowels regular, appetite good. There was pain over the region of heart in taking a long breath or moving. A well-marked arcus senilis was observed. At my second visit the next day I found him sitting up, feeling nicely, the pain entirely gone.

On the third day I was suddenly summoned, and upon my arrival his *widow* stated to me the following: Mr. J. arose in the morning in good condition. It being Sunday he shaved himself, and took a walk in the garden for a short time. He had had no pain since the night of the first day. During the middle of the day he went to the water-closet, and as he was gone some time she became anxious and sent one of the children for him, who found him lying dead upon the floor.

Autopsy, twenty-four hours after death. Lungs healthy. Old adhesions of pleura. No signs of recent inflammation in pleura or pericardium. Pericardium fully distended with blood. Upon removing the heart, a rupture large enough to admit my little finger was found at the upper and middle portion of the left ventricle; the walls of the heart were flabby and soft, very pale, and easily lacerated. Liver pale and soft. Other organs normal.

Rupture of the Heart. — S. D., aged forty-three, overseer in woolen factory, for a few days had had a bad cold. During the night of November 6, 1875, he was taken with very severe pain two inches above the left nipple. He applied a mustard paste, and took "something hot," and in a short time felt easier. He breakfasted, and went to business as usual. About ten A. M., in attempting to throw a web of cloth from his shoulder, he fell backwards upon the floor, and when I arrived, fifteen minutes afterwards, I found him dead, not having spoken or moved.

Autopsy, twenty-four hours after death. Rigor mortis well marked. Brain healthy. Old pleuritic adhesions. Pericardium distended. Signs of inflammation along the course of the aorta from the origin up over the arch. There was a rupture of the right ventricle the size of a goose-quill. At the point of rupture there was a melanotic deposit about the size of a pea, and around this point there were signs of recent ulceration. There were five other points of deposits of melanotic matter about the heart and the arch of the aorta. On the internal surface of the aorta, covering a space of about two inches in the arch, was a scale-like deposit of cretaceous matter rendering the vessel stiff to the touch. Scattered throughout both lungs there were innumerable points of melanotic matter about the size of a millet seed, rendering them of a dark, somewhat grayish color. All the other organs were healthy.

Rupture of the Uterus. — I was summoned to attend Mrs. A. during confinement. Upon arriving there I found that a "doctor" had been in attendance some thirty-six hours. Mrs. A. was of English descent, fifty-one years old, and had had nine children.

Upon entering the room I found the patient *in articulo mortis*, and from the husband and attendant obtained the following history: For the first twelve hours her labor pains were rather light, and after trying the effect of walking and several positions to assist in the descent of the child, it was discovered that the cord had presented at the vulva.

The previous attendant not deeming this of any advantage to the case it was cut as short as possible, and each end was tied, after which the patient was allowed a few hours' sleep, and then exercise and position were again resorted to with better success than before. This time a hand and arm presented themselves and demanded exit, but the attendant, preferring not to accept of such a small portion of a presumably good-sized child, made several ineffectual attempts to "shove" the offending arm back. Not being able to accomplish this the arm and some portions of the vagina were amputated, the arm at the elbow, and the vagina in small lacerated pieces. After this there was a hæmorrhage sufficient to saturate the bedding and run down on to the floor, The husband, becoming anxious in regard to the safety of the child. suggested a consultation, and I was sent for. It being some sixteen miles I did not arrive until the patient was nearly dead. Under these circumstances I refused to make any attempt at delivery, as the child had been dead for some time, and the mother was nearly so. The vagina was badly swollen, the patient was pulseless and cold, and a few moments closed the scene.

After waiting a proper length of time I made a post-mortem examination. Upon opening the abdomen the back and nates of the child presented, and farther examination showed a rupture of the uterus from fundus to neck. There was a small quantity of blood in the pelvic cavity, and the walls of the vagina were lacerated in several places.

RECENT PROGRESS IN ANATOMY.

BY THOMAS DWIGHT, M. D.

Methods. — Carrière [1] describes the methods by which he has been remarkably successful in finding anastomoses between the processes of the large nerve cells of the anterior horns of the spinal cord. His figures are so convincing that we must believe that it is through imperfection of method that their frequency is not more generally recognized, unless, indeed, as is not impossible, they are more frequent in the young than in the adult animal. He took the fresh cord of a calf four weeks old and cut it into small pieces, some of which he put into a bichromate of potash solution of one to six hundred, and others into a solution of the same strength of chromate of ammonium. After ten days he removed the pieces from the first solution, washed them, and put them in the usual carmine solution. In five days more they were ready for use. Those in the second solution were left there for two weeks, and then similarly treated, but they required only three days in the carmine to become sufficiently soft. He then separated the anterior horns from

[1] Archiv für mikroskopische Anatomie, Band xiv., Heft 2.

their surroundings, took very minute pieces of them, and under a dissecting microscope picked them to pieces; and if with a power of sixty diameters the appearance was satisfactory he put on a covering glass, then treating them successively with alcohol, oil of cloves, and Canada balsam dissolved in chloroform.

Busch,[1] instead of the usual fluids for softening bone for microscopic examination, recommends pure nitric acid diluted with ten volumes of water, for adult bone. For young bones it should be diluted to one per cent., and for fœtal bones be made even weaker. The fluid should be changed every day, and in eight or ten days the effect is obtained. As soon as this occurs the bone should be washed thoroughly in running water, and then put in strong alcohol. Busch advises that it should be in the alcohol for two or three days before being put into the acid. He finds nitric acid less likely to cause swelling of the tissues than hydrochloric. Chromic acid causes shrinking, and picric acid is inefficient except for very small pieces.

Some interest has been awakened by the papers of Arthur Boettcher,[2] in which he claims, by treating mammalian blood in some instances with alcohol and acetic acid, and in others with a saturated alcoholic solution of corrosive sublimate, to have demonstrated a nucleus. We have been rather surprised at the notice the papers have attracted, as it is well known that various reagents will cause most striking changes in blood corpuscles, and as it is quite unphilosophical to suppose that the changed corpuscle is more worthy of credit than the normal one. Dr. A. von Brunn [3] shows that these appearances are artificial effects, and we commend the paper to such as require to be convinced of so evident a fact.

Nerve Fibres. — Franz Boll,[4] now professor at Rome, has written a paper on the medullated nerve fibre, which is worthy of attention. There is something to criticise in the arrogant style in which he speaks of other observers, which is not particularly becoming in the discoverer of the "elastic stripe" of connective-tissue corpuscles. He examined the nerve fibres of a frog in various reagents, and watched the different phases which the nerve presented after various degrees of action. His conclusions, somewhat condensed, are that the axis cylinder, when fresh, is fluid, or at least semifluid, and, therefore, during life cannot be composed of fibrillæ, according to the views of some observers. He holds that the fluid axis cylinder is surrounded by a very delicate sheath, separating it from the white substance. He finds support for this in the appearance of drops coming from the end of the axis cylinder after treatment with distilled water. Of the white substance, Boll says it does

[1] Archiv für mikroskopische Anatomie, Band xiv., Heft 4.

[2] Memoirs of the Academy of St. Petersburg, seventh series, vol. xxii., No. 11, and Archiv für mikroskopische Anatomie, Band xiv., Heft 1.

[3] Ditto, Band xiv., Heft 3.

[4] Archiv für Anatomie und Entwickelungsgeschichte, 1877, Heft 4 and 5.

not pass uninterruptedly from one of Ranvier's constrictions to another, but is divided into a number of segments which Lantermann and others have described. These are affected so variously by reagents that Boll, if we understand him correctly, is inclined to deny that this is the normal state of affairs. He has nothing special to say of the enveloping primitive sheath, except that, so far from being interrupted at Ranvier's constrictions, it is somewhat stronger there. We are disposed to agree with these conclusions in the main, though we confess to a doubt whether the axis cylinder itself is during life distinct from the white substance. It is certainly remarkable that it is seen only after death.

Ganglia of the Heart. — J. Dogiel [1] has studied the distribution of ganglion cells in the heart of man and many animals, and denies that they are found in the substance of the organ, as is often stated. They are most plenty around the terminations of the great veins and in the auriculo-ventricular furrow. They are found among the fibres of the cardiac nerves, but no strict connection between the two has been discovered. We will quote the author's remarks concerning the spiral fibre of ganglion cells, merely observing that we are not convinced of their correctness: "Although many ganglion cells seem to be apolar, I am, nevertheless, convinced that almost all those of the frog's heart have a straight process that is directly developed from the protoplasm of the cell, and consists of a bundle of nerve fibres. As to the spiral processes, they have no existence, in spite of the opposite opinion of many experienced histologists; and though spiral fibres are to be seen in some preparations, they are merely folds of the connective-tissue capsule, which extends over the process." He thinks that these folds are caused by the acetic acid used in the preparation.

Structure of the Thymus. — Dr. Afanassiew, of St. Petersburg, has published two papers on this subject.[2] The first treats only of the concentric bodies; the second is more general. The organ is found in the five vertebrate classes, and its existence, according to our author, is doubtful only among the osseous fishes. It may consist of a cervical and thoracic portion, but in man we find only the latter. Its size in the child, as well as its shape, is subject to great variations. There can be nc doubt that its structure is essentially that of a lymphatic organ, but its early atrophy is remarkable. The concentric bodies, as they are called, have been noticed to lie in close connection with blood-vessels, but Afanassiew is, we believe, the first to show how extremely close that connection is. They begin, in fact, from a growth of the endothelial cells, which encroach on the lumen of the vessel, and by proliferation give origin to the small cells that form the greater part of the corpuscle. Altered blood disks have been found in their centre

[1] Archiv für mikroskopische Anatomie, Band xiv., Heft 4.
[2] Ditto, Heft 1 and 3.

by previous observers. The appearance of these bodies, of course, implies a beginning of the decrease of the organ, or at least of that part of it in which they occur; and it is worthy of notice that some of them are seen in organs which we may say certainly have not attained their full size. This simply shows that some parts may begin to waste while the thymus as a whole is still growing. In time the corpuscles themselves degenerate. "After the contents have passed through a fatty or colloid metamorphosis there remains in some corpuscles a homogenous mass, with a dull or almost opalescent shine, and in others fat globules of various size and highly refractive. Moreover, among the contents are found heaps of pigment and altered red blood corpuscles." In consequence of the formation of these bodies, or perhaps from the same cause, disturbances of the circulation occur, as a result of which many red and white corpuscles leave the vessels and a growth of connective tissue begins, which is accompanied with the appearance of pigment. The lymphatic elements are compressed by the new growth, and in time fatty granules appear among them, and the degeneration is soon complete. In some animals the growth of connective tissue, in others the formation of pigment, is the prevalent phenomenon.

(*To be concluded.*)

PROCEEDINGS OF THE HAMPDEN DISTRICT MEDICAL SOCIETY.

F. W. CHAPIN, M. D., SECRETARY.

JANUARY 15, 1878. *Obscure Forms of Liver Disease.* — Dr. George S. Stebbins read a paper on Obscure Forms of Liver Disease, and illustrated his remarks with the following histories of two cases that had come under his observation: —

Case I. was that of a married lady, aged thirty-five, who was taken suddenly with flowing, September 18th, followed by abortion the next day. Nothing unusual occurred until the 22d, when she was seized with violent pain in the epigastric region, the pain extending through to the back and up into the thorax, attended with chills and a cyanotic hue of the skin. The physician then in attendance pronounced the case to be congestion of the liver, and the fever, of three or four weeks' duration, which followed, he styled at first bilious and later typhoid. Seeking for the real cause of the pain, the medical attendant placed his hand behind the right hypochondriac region, and announced to the patient that he had found the cause to be enlargement of the liver, as he could sensibly feel it. He applied a fly-blister to the posterior surface, and followed it with two others in as many weeks. Up to this time there had been no pain nor tenderness at this point or elsewhere; no icterus.

Within twenty-four hours after the first blister was applied deep-seated pain ensued, followed by intense jaundice. There has ever since been great tenderness in and over the right kidney, followed by almost daily paroxysms of pain,

for almost three months. The pain, always referred to the region of the right kidney, frequently extends to the left, is followed by increased tenderness over both kidneys, and is accompanied by a sense of distress at the pit of the stomach. The paroxysms are always followed by greater intensity of the jaundice, the skin and conjunctivæ becoming dark green, and the urine almost black. Yet no tenderness has been detected on the anterior surface of the abdomen. Vomiting of white, frothy matter occasionally attended the painful spasms. The stools were variable in color and consistency, being sometimes black, at other times white or clay-colored and pasty, again of a peculiar gray mottled with glistening particles, and occasionally they would consist altogether of a thick, gelatinous substance of the color of the yelk of an egg.

The urine contained abundance of bile pigment, and at times blood. The microscope revealed renal epithelium, epithelial, granular, and hyaline casts, pus cells, blood corpuscles, and a large quantity of fungous growth. At times there has been vesical tenesmus and painful micturition.

The tongue was never coated in the least, but always dry, red, and shining. Pulse generally below the normal standard, weak, and more or less irregular. Temperature nearly normal.

About the first of October last, the body became covered with spots of purpura, petechial in size, and later these became aggregated into large masses without coalescing. Within the past few weeks large ecchymoses have appeared, on the extremities mostly, some of which measure one inch in width by two in length, of blue-black color. They are tender, and each has a central spot which is harder and more tender than the rest, and which is the last point to disappear. They generally fade out in a week or ten days. Percussion shows a well-marked diminution in area of hepatic dullness. The patient has suffered occasional attacks of syncope, palpitation, and dyspnœa.

Regarding the import of some of the more important symptoms, Dr. Stebbins gave hints backed by high authority. The general sluggishness of the circulation was, in his opinion, explained by the existence of fatty degeneration of the muscular fibres of the heart; the infrequency of the pulse depended upon the general prostration of functional and organic life, and the absence of fever was accounted for by the fact that the whole economy was prostrate, there being no febrile movement because there was no tendency whatever to reaction. He considered the nervous phenomena dependent on biliary poisoning. He did not offer a diagnosis of the case, but asked the members of the society the following pertinent questions: —

(1.) What is your diagnosis so far as it relates to the disease of the liver? (2.) Was it a primary or a secondary affection? (3.) Was the kidney affection primarily functional or organic? (4.) Was the liver affection primarily functional or organic? (5.) Why was there no pain nor tenderness referred to the liver, and so much pain and tenderness over the region of the kidneys and spleen? (6.) Was the abortion a primary and important factor in the causation of the succeeding affections?

Case II. was that of a teamster, aged fifty years, who was taken about the middle of August with the following symptoms: chills, headache, furred tongue, offensive breath, sallow complexion, accelerated pulse, elevated tem-

perature, high-colored urine, and constipation. There was a violent cough for several weeks, during the time the fever lasted. He returned to his work in about two months, though not fully recovered. Two months later he was taken with chills, together with great pain and tenderness and sense of fullness in the hepatic region. There was evidently pleurisy on the right side, with very painful respiration, and a violent cough. Frequent rigors and exacerbations of fever occurred for a week or two. The pain and tenderness extended upwards, the cough growing constantly more painful, until, finally, there appeared at the fifth intercostal space, between the right nipple and ensiform cartilage, at a point about an inch to the right of the latter, a red, tender swelling, which increased rapidly in size, and ruptured in three or four days, discharging an abundant quantity of pus mixed with more or less blood.

The acute symptoms subsided immediately upon the occurrence of rupture, but the discharge continued for eight months, since which time the patient has been well. Concerning this case the reporter asked the following questions: — (1.) Whence came the pus which was discharged at the point indicated? (2.) The trouble with the liver being primary and the pleurisy secondary, what was the affection of the liver? (3.) Was the suppuration the result of an abscess anywhere, or was it a product of effusion?

The paper was briefly discussed, after which a number of cases were reported, some of which are subjoined.

Intestino-Vesical Fistula. — Dr. A. F. Reed reported a case of intestino-vesical fistula. The patient, a French boy, seventeen years of age, had had typhoid fever three months before. He had become convalescent, and was getting about a little, when all at once, about a fortnight ago, he began to pass liquid fæces through the urethra whenever he made water. The rectum was thoroughly washed out and distended with water, but no impression was made on the amount or character of the substances voided from the bladder. It was therefore concluded that the fistula connected the bladder with the ileum. The patient was in fair condition, and suffered but little pain.

Suppurative Inflammation of Gall-Bladder. — Dr. David Clark reported the following case: A man, about forty years of age, began last summer to complain of general debility. Soon a sharp diarrhœa set in, the patient having as many as ten stools in a day. Then followed a severe cough, which gave promise of approaching phthisis, but yielded to treatment in the course of a few weeks. In September he became jaundiced; the diarrhœa and cough had ceased. Several physicians attended him, until at last he fell into the hands of "Dr." W. He purged him at the rate of thirty discharges a day, and soon put him to bed. He died December 27th.

The autopsy revealed entire absence of the gall-bladder. In place of this organ was a collection of pus in the form of an abscess, the walls of the cavity being formed by the liver above, and below by the colon, which had become adherent at that point to the liver. The colon, near the seat of the abscess, contained a dark, grumous fluid, and, further down, fæcal matter, more or less colored with bile, showing that there must have been communication between the colon and the cavity of the abscess, which allowed the passage of a certain quantity of bile into the former from the latter The tissues were so much

softened in the vicinity of the abscess that they broke down at once on being disturbed, and thus prevented a careful examination of the exact relations of the parts. It was the opinion of those present, however, that there had been no discharge of bile through the natural outlet, the common duct, for some time. The liver was engorged, and the hepatic system contained considerable thick bile, which could be easily squeezed from the open mouths of the hepatic veins. The kidneys showed evidences of chronic changes in the tubules.

Tuberculosis. — Dr. H. G. Stickney read a letter from Dr. Holbrook, of Palmer, giving an account of a case of tuberculosis. The patient was a colored boy, aged twelve years. Autopsy revealed tubercles in abundance, throughout the lungs, bowels, and mesentery. The liver weighed seven pounds and one ounce, and extended from the diaphragm to the os pubis. Dr. Holbrook noticed nothing abnormal about the organ except its size. The gall-bladder was very small. The whole body would not weigh over thirty-five pounds.

Aortic Aneurism. — Dr. Chapin reported the results of an autopsy which he had made on the body of Dr. W. J. Sawin, just one month after his tragic death at the Masonic Hall in Springfield. The body, which had lain in a tomb since the funeral, was somewhat stiffened by cold, and was in almost a perfect state of preservation. The brain was first examined, and nothing abnormal was discovered except a small patch of atheroma in the wall of the basilar artery. The organ weighed fifty-seven ounces.

On opening the chest a very large deposit of fat was observed in the anterior mediastinum. The pericardial sac contained a full pint of blood, partly clotted. On removing this and searching for its source a small ruptured aneurism was discovered projecting from the aortic wall, about half an inch directly above the point of origin of the left coronary artery. The aneurism was about as large as a small filbert; on both sides of it and below it, as well as over the whole anterior surface of the heart, was a deposit of fat so abundant that but little muscular tissue was visible on this aspect of the organ. Section showed streaks of fat running through the muscular walls of the right auricle and ventricle, the walls themselves being considerably thinned. The left side of the heart exhibited similar changes of less extent. The aorta was somewhat dilated. Opposite the aneurism, on the inner surface of the aorta, was an atheromatous ulcer an inch and a half long and three quarters of an inch wide.[1] The heart weighed twenty-two ounces.

Injury of Orbit. — Dr. Gardner reported a case of injury to the orbit, in which a sharp stick had been thrust in between the eyeball and the wall of the orbit, on the nasal side. The stick was removed with difficulty, seeming to be impacted in some of the structures of the orbit or eyeball. A year later an opening occurred above the globe, and about four weeks after this event a small piece of wood was discharged. Dr. Gardner thought the stick must have struck the bony wall of the orbit, and bent upon itself, so that, when it was pulled out, the end thus bent was separated from the rest and left behind to work its own way out at a later period.

[1] It will be remembered that Dr. Sawin's death was ascribed to apoplexy. Vide JOURNAL, December 27, 1877.

PROCEEDINGS OF THE PROVIDENCE MEDICAL ASSOCIATION.

VIRGIL O. HARDON, M. D., SECRETARY.

SEPTEMBER 3, 1877. *Forceps in Breech Presentations.* — Dr. George Capron read a paper on The Use of Forceps in Breech Presentations.

Dr. Capron first alluded to a method, original with him, of delivering the child in those cases where the head is the part last expelled: namely, as the head descends into the pelvis carry the body of the child forward between the thighs of the mother, and bring down the face to the vulva, thus enabling the child to breathe before the head is delivered. When the head is lodged at the superior strait the long forceps should be used. When the head has descended into the pelvis, the face has been brought down to the vulva, and the child does not breathe, the pains being insufficient to expel it, the application of the forceps is easy, and will usually save the life of the child.

Dr. Capron related two illustrative cases. He would impress upon practitioners the importance of being always prepared with forceps.

Hydrophobia. — Dr. W. W. Potter reported a case of hydrophobia: —

A male patient, aged thirty-three, was bitten in the hand three years before. Health good until September 12, 1877, when he felt pains in the left shoulder and chest. The second day there was difficulty in swallowing, and sleeplessness. Third day the same symptoms much increased; patient excitable; could not bear a draught of air to strike him; attempt at swallowing followed by laryngeal spasm. Throat full of thick sputa, dislodged with difficulty. Pulse 72, temperature 99° F., respiration accelerated. Bromide of sodium was given and morphia hypodermically. Fourth day the same symptoms in greater intensity. Pulse 120, respiration 40. Chloroform produced laryngeal spasm. Fifteen grains of chloral were given hypodermically.

The patient died from asthenia seventy-two hours after the onset of the disease. One hundred and ten grains of chloral were given during the last thirty-six hours.

Autopsy revealed nothing but extreme rigor mortis, hypostatic congestion of the skin, and extreme congestion of all the thoracic and abdominal organs.

Dr. O. W. Brown queried whether excessive alcoholic intoxication might not be beneficial in cases of hydrophobia, as it is known to be in the bite of the rattlesnake.

Dr. Noyes, quoting Professor Dalton, stated that the dog is liable to a number of nervous diseases. One form occurs more frequently in the cold season, and when communicated to man makes its appearance in from six to nine months.

THE AMERICAN NEUROLOGICAL ASSOCIATION.[1]

THE appearance of the first volume of transactions of this new association was noticed more than a year ago in the JOURNAL, and it was recognized as

[1] *Transactions of the American Neurological Association for* 1877. Edited by E. C. SEGUIN, M. D. Vol. II. New York: G. P. Putnam's Sons. Pp. 227.

forming a contribution of merit to medical literature. We are glad to offer the same welcome to the present volume.

The number of active members is apparently small, but they seem bound to make their influence felt, as is shown, among other things, by their readiness to subscribe large sums toward the publication of their proceedings, their president, Dr. Jewell, of Chicago, speaking lightly in his address of a possible tax on each member of fifty or a hundred dollars for that purpose. We cannot pretend to give a detailed notice of all the individual papers, but will refer briefly to a few of them.

Dr. H. D. Schmidt, working energetically and by himself, in New Orleans, sends a further contribution to the histological anatomy of the nervous centres, this time taking up the ganglia of the posterior spinal-nerve roots.

Dr. G. M. Beard has investigated the cause of the endemic tetanus said to infest certain parts of Suffolk, Long Island, though now on the decline, as he finds, and concludes, on the whole, that it lies in the dampness of the ocean air combined with local dampness of the soil.

The same writer contributes a paper, summed up in the record of the proceedings, on the Influence of the Mind in the Causation and Cure of Disease, in which he seems to maintain that we ought to study how the health may be affected through the emotions, and practice accordingly. We refer to the subject because we think that this is a view only too likely to gain ground in America, and because it meets with our unqualified disapproval as representatives of the profession at large. To appeal to the superstition of our patients, or even to their emotions of hope, etc., except to the limited extent that strict custom has long and openly sanctioned, is to run the risk of doing incalculable mischief by fostering superstition in the individual and the community, and by introducing an unknown and unknowable quantity of confusion among the difficulties which attend the study of scientific therapeutics. If the physician must be friend and priest to his patients, as perhaps he must, it should only be to the extent of appealing to their better judgment. Even though the patient's bodily health may suffer temporarily for the physician's adoption of this course, his claim upon him is not so great as that of the community, lay and professional, present and future.

Dr. Seguin contributes a number of very valuable autopsies in cases of localized cerebral lesions, which support, on the whole, the views of Hitzig, Ferrier, etc., as to the functions of the so-called motor region of the brain, though not particularly as to the exact position of the various "centres;" and Dr. Spitzka reported a case where convulsive movements of the facial muscles and arm of the right side were apparently due to a lesion of the cortex cerebri on the right side (exact position not stated). The explanation of these discrepancies is no doubt to be sought in part by the aid of anatomy and physiology, but in part also by that of philosophical inquiries, such as characterize the writings of Hughlings Jackson and the recent work of Kussmaul on Aphasia, etc.

Dr. S. G. Webber, of Boston, gives an article on Paralysis after Acute Disease, with six cases, which illustrate a number of the points in question.

TREATMENT OF HYDROPHOBIA: CURARA.

If hydrophobia is a dreadful disease for the patient, it is also such for the physician and attendants; even for those, if any there still be, who regard the phenomena as of a purely psychical origin. It is perhaps the disease of all others in which the physician feels himself not only powerless to cure, but often even to alleviate suffering. Morphia and ether, those invaluable aids in most hopeless and painful diseases, betray us here. All antispasmodics and sedatives and evacuants have been tried, from injections of tobacco and bleeding forty years ago, to steam baths, chloral, and bromide latterly, with uncertain and unsatisfactory results, until one is almost led to think that the resort to the pillow, at one time prevalent in parts of Europe, if not an ethical was at least not a cruel procedure. Jaborandi, or its alkaloid pilocarpine, has been of late suggested as a remedy by elimination, with the same end in view as the treatment by steam baths, known as Buisson's system; but we know of no cases where it has been tried, and should not anticipate any degree of success.

At least three trustworthy cases have been reported within late years in which recovery from symptoms similar to those of hydrophobia has followed the use of curara. Was the disease in each or any of these hydrophobia? was the recovery due to curara? Certainly none of the three is so convincing as to disarm skepticism, though the case reported by Dr. Watson, of Jersey City,[1] is striking. The amount of curara used was very small, about one third of a grain, and was administered subcutaneously at intervals of three hours, the first injection containing one sixteenth of a grain, the second one ninth of a grain, and the third one sixth of a grain. No physiological effects are reported to have been produced. It was administered on the sixth day of the disease, when marked symptoms of exhaustion are said to have been present. In the case of Dr. Offenberg,[2] morphia and chloroform having been used without success, three grains of curara were introduced within five and a half hours in seven injections. Muscular paralysis supervened, reaching its maximum on the second day. The second day after the injections a slight relapse of the first symptoms was controlled by one half a grain of curara. The injections were begun three hours after the outbreak of the symptoms. The recovery was slow. In the third case, that of Dr. Polli, the subject was a child twelve years of age; twenty centigrammes (three grains) of curara were administered in five and a half hours in seven injections. Partial paralysis was induced. A return of the previous symptoms three days later was controlled by three centigrammes (half a grain).

On the other hand, we have at least three cases in which curara was used with no effect, or an unsatisfactory one. In one case[3] six and a half grains were given in four injections at intervals of two hours; the first injection containing one grain, the second one grain, the third two grains, the fourth two and a half grains. No effect was produced. In the case reported in the Journal, May 17, 1877, four grains were injected in half-grain doses within

[1] American Journal of the Medical Sciences, July, 1876.
[2] Deutsches Zeitschrift für praktische Medicin, No. 52.
[3] Lancet, 1872, page 227.

twenty-one hours, but on this occasion morphia, nitrite of amyl, chloroform, and chloral were also used.

In a late case, not yet reported, which terminated fatally, four and a third grains were injected in varying doses within five and a half hours.

Other reports exist of the unsuccessful use of curara, but in most the amount was extremely small.

The great present drawback to the use of curara as a drug is its very uncertain purity, scarcely any two specimens being the same in this particular. We may thus account in part for the different results obtained in those cases where it has been tried and the unsatisfactory impression they make. The character of the effect produced is always the same, but the amount varies with the quantity of extractive matter. Apart from any experience, ought we to expect good results from what we know of the physiological action of curara? We learn from Claude Bernard's [1] experiments that it produces some peculiar effect upon the terminations of the motor nerves, "unhooking," to use his expression, first the central terminations in the cord and subsequently the peripheral terminations in the muscles; this latter is only reached where the circulation is carried on for a longer time, as in cold-blooded animals, or with artificial respiration in mammals. The result is an inability of the motor nerves to cause contraction of the muscles. The muscles of the extremities are apparently the first cut off, then those of respiration, and finally the heart.

Death in hydrophobia usually takes place from asthenia, the result of constantly recurring and exhausting convulsions, or from asphyxia during one of these spasms. From what late investigations have taught us of the minute pathology of the nerve centres in the medulla and at the base of the brain we may attribute the spasmodic manifestations to the congestion and hyperæsthesia of these centres, and of parts of the cord in a less degree. Curara can produce no effect upon these central lesions. An irritating impression is received, is transmitted, is registered at the central office, producing there the proper commotion; here, however, the routine is broken; orders may be prepared for the muscles, but they cannot be sent, and do not arrive.

All we can expect, then, of curara is an avoidance of the outward and visible sign of spasm. This is not much, but we are not ready to say that it may not be enough in some cases to prolong life and give an opportunity for the elimination of the hydrophobic poison.

Certain precautions should be borne in mind. The efficacy of any specimen should be previously ascertained by experiment. It should only be administered hypodermically. In preparing it the drug should be reduced to a fine powder, diluted with a little distilled water, and filtered through filtering paper. This should be done at least on the day or better still at the time of use, as a second precipitate of extractive matters is formed upon standing which cause abscesses at the points of injection. Larger quantities should be administered than has hitherto been usually the case, either in the form of one large dose, or, perhaps better, of frequent small doses. One to two decigrammes (about one and a half to three grains) have been given at once in tetanus.[3] The

[1] Physiologie générale, 1872, page 237.

[2] Vulpian, Leçons sur la Physiologie, 1866, page 211.

[3] Voisin. Dict. de Médecine et de Chirurgie pratiques.

earlier in the disease the drug was used the more favorable result we should expect, and the less the quantity of curara we should suppose necessary.

We cannot but think it worth while to make further use of curara in hydrophobia in view of the results so far obtained, and certainly in the absence of anything more promising.

MEDICAL NOTES.

— Dr. De Chaumont observed, in a square ward of St. Mary's Hospital, which had a dividing screen down the centre, on each side of which beds were placed, that patients in some of the beds got erysipelas, whilst those opposite did not. On examining the air, it was found to be more impure where the erysipelas prevailed, the patients receiving only 1560 cubic feet of fresh air per head an hour, whereas in the other parts they were receiving from 2500 to 3600. Pus cells were also detected by the microscope over the beds where the ventilation was least satisfactory.

— The last report of the British Army Medical Department for 1876 shows that the admissions into hospitals, among 48,620 soldiers, for primary venereal sores were thirty-three per one thousand men at those stations where the laws regulating prostitution are in force; among 38,073 men, where those regulations are not applied, the rate was sixty-three, or *nearly twice as great.* At the former stations the gonorrhœa rate was sixty-eight per one thousand, whereas in fourteen large stations not under the contagious diseases acts it was eighty-nine. The prevalent opinion of the medical officers of the various commands is that those enactments exercise a salutary influence upon the health of the soldiers. In some places, however, it is clear that they do not accomplish any real good; in a few, indeed, there is apparently an increase in the amount of venereal disease in spite of them.

— A very suggestive series of experiments has recently been performed by Professor Frankland, with the object of ascertaining how far it is possible for solid or liquid particles to be scattered in the air of sewers as it passes along over the sewage. By using a solution of a salt of lithia mixed with water, and then agitating the mixture more than would take place under any circumstances in sewers, he was unable to detect in the contiguous air any trace of lithia even by the spectroscope. By generating gases in the fluid, however, in a manner similar to what occurs during putrefaction, the particles of lithia were carried into the air with these gases, and were easily ascertained to be present there. The bearing of these facts upon the importance of having all sewage discharged before it putrefies, and the danger of our cess-pool-sewers in Boston and of all cess-pools, whether in sewers or out of them, is quite manifest.

— Dengue, or "break-bone fever," so long known as a sporadic disease in Egypt, as well as in some parts of our Southern States, has appeared in Ismailia, on the Suez Canal, in a severe epidemic form. The first case was in July, the greatest prevalence in September and October. The severe rheumatoid pains, the eruption resembling scarlet fever or measles, the favorable

course and short duration of the disease, the long period of convalescence, and the tendency to repeated recurrent attacks constituted the group of diagnostic symptoms. Of two thousand persons, the estimated population of the village, nearly eighteen hundred had the fever, without a single death. The epidemic reached all quarters, Arabic, Greek, and Calabrian, and prevailed among all classes, irrespective, too, of age; occasionally six or eight of a family of ten lay ill at one time. Contagiousness was thought to be not more than a doubtful element in the spread of the disease, as it was so distinctly localized. Beside the unusual heat, Dr. Decarogna noted, as partial explanations of the outbreak, several foul, miry ditches filled with stinking animal and vegetable decaying matter; an uncommonly high level of the ground-water; pollution of the wells; stagnant pools of surface soil-water, mixed with slop-water, and finally the agglomeration, in the town, of filth of all kinds around the dwellings of the lower classes.

— We quote the following from the *Times and Gazette*, which fairly represents the opinion of the English *Medical Press* on one of the questions already following the recent permission acceded to women to receive degrees from the London University: "To admit women to the profession is one thing, but to admit them to our societies is quite another thing. And a man may hold that women ought to be allowed to enter the profession, or may no longer resist their doing so if they can, though he thinks they are making a great mistake, and yet may refuse their entrance into our societies and associations without being inconsistent. To refuse the latter does not prevent or interfere with their adopting a career for which they think they are especially fitted; and many men may very strongly object to women being present at or taking part in discussions on medical topics. It may be replied, and has been, that "to the pure all things are pure;" and so they are, or ought to be, so long as their discussion is a matter of necessity. But it is no matter of necessity that medical women — or ladies, as the committee of council prefer to call them — should assist at the public discussion of all medical topics with medical men; and it has ever and always been the custom in civilized society for men to scrupulously avoid the mention of, much more discussions on, certain functions, diseases, and parts of the body in the presence of the other sex. This, it is said, is a prejudice, an outcome from habit and education. We do not think so. We should rather say that it is an instinct that becomes developed in proportion as nations become civilized, and we cannot but regard any effort or tendency to repress or suspend it as an unmixed evil."

— A new small insane asylum is to be built in Leipsic, near the general hospital; the various departments will contain accommodations for one hundred patients, and are designed chiefly for furnishing means of clinical instruction in mental disease.

— Ruhmkorff, the celebrated electrician, born in 1803, died in Paris on December 20, 1877. The *Medical Press and Circular* informs us that M. Janin delivered an address over the grave, in which he stated that Ruhmkorff, because of his benevolence and his liberal expenditure on behalf of science, died almost a poor man. For the famous "Ruhmkorff coil" he received the prize of 50,000f. at the French exhibition of electrical apparatus in 1858.

— The following proposal has been submitted to the municipal council of Paris: Considering that for the last twenty years representations have been made by hospital surgeons in favor of the isolation of children attacked with diphtheritic diseases, which representations have had their origin in the great mortality of the little patients who have been operated upon often in the same apartment, in presence of other children, and exposed consequently to all the contagious diseases which exist in the general wards; considering also that a diphtheritic epidemic has existed for the last two years, which renders imminent similar unfortunate results, therefore the council is asked to vote the establishment of isolation wards for such diseases, specially reserved for children, and notably in the hospital of the Rue de Sèvres.

— In the absence of any power of compulsion, under the law, the Berlin Board of Health have requested physicians to report to them all cases of diphtheria coming to their knowledge. In houses where that disease appears, it is advised that children be kept from school until a physician's permission is obtained, allowing the resumption of school-work. Schools are to be closed only in extreme cases, when the board consider that step necessary. There were one hundred and twenty deaths from diphtheria in Berlin during the last month of 1877; twenty-six deaths from croup were also reported.

MASSACHUSETTS GENERAL HOSPITAL.

SURGICAL CASES OF DR. WARREN ILLUSTRATING THE ANTISEPTIC SYSTEM.

[REPORTED BY J. W. ELLIOT.]

Abdominal Abscess. — N. N., a healthy farmer, of Irish descent, fifty-five years old, entered the hospital August 16th, with a large pulsating tumor in the right hypochondrium. He had once received a heavy blow on the head. Four weeks before entrance, while at work in the hay field, was suddenly attacked with diarrhœa and great pain in the abdomen. Soon after this he noticed the tumor. The diarrhœa and pain continued. He walked with his left shoulder higher than his right, and had some lateral curvature of the spine. The pulsation, although evident to the eye, was not felt when the tumor was grasped laterally. There was no aneurismal bruit. It was therefore considered to be a transmitted pulsation. There was an evening exacerbation of temperature. The diagnosis of an abscess within the abdominal walls was made, originating probably from the spine or a rib.

August 22d. The patient was etherized, and an aspirating needle having been introduced a pint of pus was drawn off. During the following month the sac gradually refilled. The patient had frequent attacks of diarrhœa with apparent diminution in the size of the tumor, and gradually failed in strength until he became very feeble.

September 22d, the patient having been etherized, the abscess was laid open by an incision two inches long, under carbolic acid spray. The finger was introduced into a sac as large as two fists, extending up beneath the ribs and down as far as the umbilicus. The pus being evacuated, a drainage tube was

introduced and the incision closed. A Lister dressing was applied. The temperature fell to the normal degree and did not rise again. During the following five weeks the dressing was changed but four times. The discharge from the drainage tube gradually diminished, and the patient's general health steadily improved. On the thirty-fourth day after the operation the drainage tube was found to be tightly grasped by the granulations which had completely filled the cavity. The tube was then shortened, so as to keep the mouth of the wound open, allowing the deeper part to heal. This fragment was removed two days later, after which the wound immediately closed. The patient has since appeared at the hospital, and is in good health.

Double Hydrocele. — S. R., a negro, twenty years of age, with an enlargement of both testes, evidently scrofulous, and a large double hydrocele, entered the hospital on September 22d for radical cure. The disease had existed for five months, and had not yielded to tapping.

On September 26th, the patient being etherized, each tunica vaginalis was laid open at its most dependent point by an incision two inches long, under carbolic spray. The cut edges of the tunica vaginalis were then stitched to the corresponding parts of the scrotum, carbolized with catgut, thus leaving a free opening into the cavity.

A Lister dressing was carefully applied. On the following evening the temperature rose to 104.2° F. On the second day after the operation the dressing was changed under spray, and the scrotum was found very much swollen and œdematous. This was apparently due to constriction of the neck of the scrotum by the dressing. The temperature remained at 104.2° for two days, then gradually sank, reaching normal on the eighth day.

The patient suffered no pain at any time. During eleven days following the operation the dressing was changed three times; the swelling had in the mean time gradually subsided.

The Lister dressing was removed on the eleventh day. A small superficial granulating surface only remained, the tunica vaginalis having evidently been obliterated immediately by adhesive inflammation. The granulations were strapped with plaster, and the patient left the hospital, cured, at the end of a month. The constitutional disturbance was so slight as to be made apparent only through the thermometer. Had it not been that the testicles were much enlarged by previous disease the patient might have been discharged at the end of ten days.

Excision of Knee-Joint. — J. R., a feeble Frenchman, twenty-nine years old, entered the hospital July 27th with chronic inflammation of the knee, caused by an injury fourteen years previous. Four months before entrance an abscess formed and discharged, leaving a fistulous opening into the joint. The patient had become much emaciated, and had a bad cough and waxy complexion. The chest was examined, and some dullness and fine moist râles were found under both clavicles. There was nothing abnormal about the urine. The affected leg was much emaciated, and the joint nearly stiff. A probe passed readily into the joint and touched rough bone. A ham-splint was applied to the leg, the patient was put on good diet and tonics, and kept in the open air until his general health was much improved.

October 20th. The patient being etherized, the joint was laid open, under carbolic spray, by a horizontal incision. The articular surface was found to be extensively diseased, and excision was accordingly performed. The bones were wired together with two stout silver wires, and a drainage tube passed through the bottom of the wound behind the knee. The vessels were secured with carbolized catgut ligatures. A Lister dressing was applied, and the leg put on a hospital resection splint.

There was scarcely any constitutional disturbance. The temperature never rose above 101° F. The dressing was not stained or changed for eight days, at which time the wound had completely closed about the tube.

The dressing was changed only four times in one hundred days, and at no time was there any smell of putrefaction. Eight weeks after the operation the wires and drainage tube were removed, at which time the bone did not yield under moderate pressure. Four weeks later there was good bony union, but a sinus left by the drainage tube still remained unhealed. There was also a small superficial sinus, which was laid open.

At the present time, twenty weeks after the operation, the patient is about on crutches, with a dextrine bandage over a Lister dressing, which was left on, as a small sinus had not entirely closed. He bears his weight upon the leg to some extent in walking.

Excision of Breast. — Two breasts were excised, the first under carbolic spray. In the second case the spray was not used, but the wound was thoroughly washed with carbolic acid and a Lister dressing applied while the wound was being syringed. The vessels were secured with carbolized catgut and the flaps stitched with the same material. In both cases a drainage tube was left in the wound for five days. The dressings were held in place by an elastic swathe. Large bunches of salicylic cotton were put on, outside the Lister dressing, at those points where the discharge was likely to stain through.

Both cases did well. There was scarcely any constitutional disturbance. The temperature only once reached 102° F. in each case. In the first case the disease was extensive, largely involving the axillary glands. The operation was performed during lactation, and there was unusually profuse hæmorrhage.

On the fifth day, as unfortunately is usual, the catgut stitches were dissolved; the flaps being heavy were not sufficiently adherent to prevent the wound from gaping slightly in the centre. The dressing was changed three times in eight days, and then removed. The patient left the hospital, well, seventeen days after the operation.

In the second case the flaps gaped somewhat from the same cause. The dressing was changed six times in eighteen days. The patient left the hospital, well, twenty-three days after the operation.

In both of these cases the discomforts attending the usual traumatic fever and local inflammation were absent, and convalescence was rapid. All important cases were treated antiseptically during Dr. Warren's term of service, except those about the face and neck, where dressings are applied with difficulty and healing goes on rapidly. Erysipelas, which had been prevalent the previous summer, was absent, and the improved hygiene of the wards was noticeable.

COMPARATIVE MORTALITY-RATES.

	Estimated Population, July 1, 1878.	Deaths during week ending Feb. 23, 1878.	Annual Death-Rates per 1000 living.		
			For the Week.	For the Year 1877.	Mean of ten Years, '68-77.
New York.	1,093,171	524	24.92	24.32	28.71
Philadelphia.	876,118	279	16.56	18.80	21.54
Brooklyn.	549,438	184	17.41	21.51	25.50
Chicago.	460,000	125	14.13	17.83	22.39
Boston.	375,476	142	19.66	20.10	24.34
Providence.	104,500	49	25.48	18.81	19.20
Lowell.	55,798	16	14.91	19.09	22.50
Worcester.	54,937	13	12.31	21.07	22.30
Cambridge.	53,547	18	17.47	18.69	20.83
Fall River.	53,207	18	17.59	21.35	24.96
Lynn.	35,528	17	24.89	20.42	19.67
Springfield.	33,981	6	9.19	16.04	19.77
Salem.	27,140	12	22.99	20.38	21.15

OBITUARY. — The following resolutions were adopted by the South Boston Medical Club on the death of Dr. S. F. Bachelder: —

Resolved, That in the death of our late associate, Dr. S. F. Bachelder, connected with insidious spinal disease, we recognize the sovereign decree of an all-wise Providence.

That we deeply deplore the loss of a worthy and respected brother, whose professional zeal, self-denying labors, and many characteristics of the good physician have commanded our confidence and esteem.

That with high appreciation of the public and private as well as professional life of the deceased, we cherish his memory with grateful and tender remembrance.

That we offer to the widow and family our professional sympathy and abiding consideration and regard.

That these resolutions be entered on our records, and a copy be furnished to the family, and to the press for publication, and that the secretary be charged with this duty.

BOOKS AND PAMPHLETS RECEIVED. — Reports on Diseases of the Chest, under the direction of Horace Dobell, M. D. Vol. III. London: Smith, Elder, & Co. 1878.

Laryngoscopy and Diseases of the Throat. By Prosser James, M. D., M. R. C. P. Second Edition. London: Baillière, Tindall, and Cox. Paris: Baillière. Madrid: Bailly-Baillière. 1878.

Roosevelt Hospital, New York. Sixth Annual Report.

Reference and Dose Book. By C. Henri Leonard, M. A., M. D. Third Edition. Detroit. 1878.

De l'Amputations du Col de l'Uterus. Par le Dr. A. Leblond. Paris. 1877.